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WELLINGTON BRINK

Editor

Art Work by
W. HOWARD MARTIN

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NEW COOPERATORS TO GET MAGAZINE.—Through the courtesy of local farm implement companies, every new cooperator of the St. Mary, Lafourche-Terrebonne, and Lower Delta Soil Conservation Districts in Louisiana will receive a year's subscription to SOIL CONSERVATION Magazine. The district supervisors made the arrangements for the gift, the equipment firms agreeing that the magazine would help each recipient to become a better conservation farmer. The supervisors will furnish the implement firms with the names of new cooperators every 6 months.

GEORGIA CONSERVATION WEEK.—A total of 38,280 persons actively participated in Conservation Week in Georgia through tours, meetings, motion-picture showings, and attendance at local churches where conservation sermons were preached, State Conservationist T. L. Asbury reports. In addition, 1,131 special articles, advertisements, and editorials on conservation appeared in local newspapers and 69 conservation radio programs were broadcast over 29 local stations. Special events included 84 farm tours with 3,743 persons participating; 161 meetings with attendance of 12,549; 100 motion-picture showings with audiences totaling 8,766, and conservation sermons in 92 local churches with congregations totaling 13,222.



THE COVER.—Conservation farming means prosperous villages and neat, well-kept churches. Here we catch a glimpse of the farm of Herschel Boyer, who cooperates with the Catoctin Soil Conservation District. His plan was drawn in the fall of '47. Jefferson, Md., is in the background. Photographed by Hermann Postlethwaite.

All orders go to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

At Denver Conference. Back: Jorge Leon, Fernando Suarez, Carlos Fynn, Guido C. Rando. Center: Horacio Betancourt, Luis de Armero, Manuel J. Chavez, Jose S. Juaregui, Gonzalo P. Andrade. Front: Jose A. Rugeles, William X Hull, Dr. Bennett, Lorenzo Patiño.



By

HUGH BENNETT

NATIONS WORKING TOGETHER

AT Denver, Colo., September 7 to 20, 1948, our entire Western Hemisphere family of Nations came together in a historic meeting: The Inter-American Conference on Conservation of Renewable Resources.

This Conference was remarkable in a number of ways. It was historic because it was the first international conference on the conservation of soil, water, and related resources. It was remarkable also because almost every conceivable aspect of the whole field of conservation having to do with land, water, vegetation, and animal life in relation to human welfare and world peace was brought out in frank discussion.

A Scientific Conference

It was a scientific conference. The delegates very largely were scientists—specialists in the sciences of land, water, plants, animals, and in the social sciences. Discussion ran along lines of what these sciences could contribute toward the solution of the pressing problems of meeting the

food supply of our rapidly increasing populations. This was the central theme of the Conference.

And, finally, the discussions added up to a general recognition of hemispheric—and world—needs for getting under way immediately national programs for the conservation of soil, water, forests, and wildlife, including fish. There was general recognition, too, of the need for preserving scenic and recreational areas and native wilderness areas.

A Conference of Good Will

The Denver Conference was the most harmonious and friendly international gathering I have ever attended. For a long time I have observed that wherever people work together, or discuss and plan together, for the protection and betterment of our agricultural land they are invariably drawn closer together than in any other kind of work or planning affecting the lives of people. I think this may be due to the fact that in a very meaningful sense productive land is the mother of every one of us on earth. This mother of all of us responds to kindly treatment with warm affection, giving us food, clothing, health, contentment, neighborliness, and peace.

This Conference at Denver probably will result in such widespread hemispheric goodwill, neighborliness, and helpfulness toward peace that the

effects may reach, beneficially, beyond the seas that separate us from other peoples.

Let's Have More Such Conferences

I think—and sincerely hope—this is not the last, but the first meeting of the kind. I cast my vote for others—to be held in much the same environment and manner. And I propose further that *ways and means for keeping land productive* be the central theme. This would, of course, bring in again for full consideration not soil and water only but plants, animals, and recreational and scenic resources. Not only that, it would deal with these resources in both their separate and combined effects on our lives—on our economic and social welfare, our health, and our happiness.

Hold such conferences where indoor considerations can be appropriately intermingled with field trips to see and study the things we talk about, their practical application, and the wholesome effects that are being derived from them—just as we did at Denver.



Delegates inspecting highway erosion control.

Field Trips

There were several field trips that proved interesting to all attending the Conference. A full day's trip was made by comfortable busses to the Arapaho and Pike National Forests to study forest management, grazing control, and forest-water relationships. A second full day's trip was through the Cherry Creek Soil Conservation District southeast of Denver. Here soil conservation problems and practices were shown as they are handled by farmers in a soil conservation district, with the technical assistance of the Soil Conservation Service. A third day was spent in the field observing the 1-day remaking of an eroded farm into a farm completely safeguarded with soil conservation measures. Then, also, a day was spent visiting the Rocky Mountain National Park and another day visiting the Big Thompson Irrigation and Power Project.

Visits also were made during the Conference to various laboratories and museums located in Denver.

Declaration

For fitting emphasis and widespread distribution there is presented here the Declaration of Conservation Principles unanimously adopted by the Denver Conference.

As representatives of the governments of the Americas we have met to take counsel with one another about the wise use of the earth's resources. Our deliberations have been guided by our awareness of the gravity of the situation in which the peoples of the world now stand. Everywhere in the world natural resources have been depleted by ignorant and reckless exploitation that has ignored the inexorable natural laws which maintain them, and this depletion was disastrously accelerated by the recent world war. Throughout the world steadily increasing populations have put an ever-increasing strain on the dwindling resources. These two forces, each of which reinforces the other, have brought mankind to an almost critical point. The challenge of our time is that we must arrest and reverse them or face the fact that the very existence of civilization will be brought in peril.

In some areas millions of people must live below a tolerable level of subsistence, and nowhere in the world has a proper living standard been achieved for everyone. Moreover, mankind is oppressed by fear of further wars. Much of this fear originates in hunger and want, in which lie the seeds of disorder from which might come the wars we so greatly fear. We believe that on the road toward peace the only guarantee of peace is a careful development, utilization, and protection of renewable natural resources. We firmly believe that the earth is rich enough to insure a better living standard for everyone, provided that measures for such development, utilization, and protection are immediately adopted and adhered to by all from now on. We believe that, although our knowledge is incomplete, inexact and intermixed with error and misconception, nevertheless mankind now knows enough to devise effective measures and apply them with success. We believe that it is within our power to maintain civilization, to advance farther than we have now come toward the comfort and stability that are mankind's oldest dream, and to pass on to our successors an increased and strengthened natural heritage now being drained by our wastefulness. Finally, we recognize that in comparison to other parts of the world, the Americas have a greater natural endowment and have been less exhausted by war and exploitation. This good fortune lays on us a responsibility for leadership in meeting the challenge that we may by no means avoid or escape.

The crucial problem of our generation is to safeguard, maintain, develop, increase, and wisely use for the common benefit of mankind the natural resources of the earth.

During this Conference experts drawn from many disciplines of science and from many parts of the Western Hemisphere have analyzed this problem. In a spirit of the severest realism they have explored its complexity, pointed out the dangers we face, and discussed ways of meeting those dangers, correcting the errors that have been made, and avoiding errors hereafter. They have demonstrated that, precisely as hunger knows no frontier, so the crisis we face is common to us all, transcending national barriers and demanding a unified cooperation toward the final objective that must be as wide as the hemisphere. We all feel necessity's universal nature and our meeting today should be considered a demonstration of that feeling. The earnest desire for peace, which all men cherish, must point the way to wider cooperation of peoples toward a purpose beyond this hemisphere.

Editor's Note on Conference Actions

The Conference adopted a resolution recommending "to the appropriate committee the name of Dr. Hugh H. Bennett as a candidate for the 1949 Nobel Peace Prize in recognition of the valuable services that he has rendered to humanity."

The Conference also passed a floor motion "extending to Dr. H. H. Bennett an invitation to visit and spend some time in each of the Latin American countries in order to advise and help them on their erosion and conservation problems."

The Conference granted a vote of applause to William X Hull in recognition of his work as Foreign Liaison Representative of the Soil Conservation Service for his efficient and sympathetic dealings with all Latin American countries and technicians.

Following the adoption of the declaration of principles, the Conference passed a resolution calling on the Pan American Union, working in close relationship with FAO, with other organizations of the U. N., and with the Inter-American Institute of Agricultural Sciences, to assume leadership in promoting cooperation among the governments of the Western Hemisphere in the development and conservation of renewable natural resources; in establishing a service to assist governments in obtaining scientific and technical advice; in aiding educational institutions to develop properly balanced curricula; and in encouraging the exchange of teachers, research workers, students, and trainees.

The Conference further recommended the creation of an Inter-American Conservation Society; the preparation of a glossary of ecological and conservation terms in Spanish, Portuguese, English, and French; that, if possible, it convert the exhibit of pictures and graphs which was of such great service in the presentation of conservation problems into a mobile unit with accompanying lectures; and that it create an annual prize to be called "Award of Merit for Efforts on Behalf of the Conservation of Natural Resources."

The catastrophe that threatens civilization results from man's failure to live in harmony with the principles that govern his environment. Man has abused the earth that is his principal source of wealth; and the earth therefore dispassionately makes his existence even more precarious and threatens him with extinction. Until he brings himself to live in harmony with nature there is no hope for peace or plenty or progress. We declare that, in order to establish a harmonious relationship between civilization and the environment in which it must exist, it is both our duty and our purpose:

To put an end to practices that injure or destroy the renewable natural resources.

To substitute for them practices that accord with nature's order.

To repair insofar as possible the damage already done to our renewable natural resources.

To increase the land's productivity by every means that science can devise and planning by private and governmental enterprise can effect.

To maintain and protect to the utmost all the renewable natural resources.

To safeguard and, as far as possible, to stimulate the land's natural ability, not only to maintain its productivity but to increase it in accordance with pertinent knowledge.

To bring about a proper equilibrium between populations and the productivity of their lands through the conservation and development of renewable natural re-

sources or other measures that careful study renders advisable.

To protect and conserve flora and fauna.

To protect and maintain natural zones of outstanding interest or scenic beauty.

To increase and disseminate among all people knowledge of the relationships between men and nature.

No generation can exclusively own the renewable resources by which it lives. Successive generations are but trustees charged with maintaining unimpaired the inheritance of their successors. We hold the common wealth in trust for posterity, and to lessen or destroy it is to commit treason against the future. The principal is the natural resources. The interest is the earth's ability to maintain their yield so long as natural relationships are preserved and so long as man will govern his activities and institutions to accord with them. No generation is free to spend more than the interest yielded by rational use of the heritage. On the contrary the duty of every generation is to apply its full knowledge to protect and increase the capital sum.

The problem implicit in our purpose is composed of many complex problems intricately bound together. It is so tremendous that it can be solved only by bringing to bear on it all the instruments of scientific and social knowledge and all the skills of politics. The many specialties of the physical and biological sciences must be focused on it, together with the many techniques of engineering. But these are not enough. Conservation requires the coordinated assistance of all branches of knowledge that deal with peoples and their institutions. Economics, sociology, psychology, anthropology—all these and many other disciplines must guide us in the application of what the basic sciences have shown to be desirable. It is no longer possible to approach this problem from a simplistic standpoint. The approach must be many-sided, utilizing our entire heritage of knowledge in a coordinated effort.

Implicit in our purpose is the constant augmentation of knowledge. Conservation requires continuous advance in our understanding of nature. It requires continually increasing effectiveness in the techniques of working with nature. Research must underwrite our hope. It must be enormously extended and provision must be made for it at every facet of our problem. Moreover, time is short and researchers are scattered, not always in communication with one another, not always able to call on one another for help or information. They must be given ways of coordinating their researches, of helping one another with common problems, of avoiding the waste of duplicated or mistaken effort. Clearing centers of conservation knowledge must be provided or expanded, and the exchange of information among those who study these problems in the various countries must be intensified.

Implicit also is a much more comprehensive program than any now existent for the training of technicians, especially of those who work most directly with the land itself and with the people who get their living from it.

Ultimately, however, conservation rests on the individual's knowledge of the ends it envisages. We depend upon one another and the man who lives and works in a metropolis without ever seeing the fields that produce his food should be as concerned about those ends as the man who cultivates the fields. In his turn, the farmer is under obligation not to impair the land that produces the city's food. Everyone must be able to recognize harmful practices in the treatment of resources and must adopt the procedures that will prevent them. The end in view is that people everywhere will understand that their dependence on the earth lays on them the obligation of respecting the earth and of protecting it in order that they may enjoy its fullness. Toward this end it is the duty of governments and their agencies, of religious institutions, of public and private foundations, of universities and colleges and schools, the press, radio and motion pic-

(Continued on page 104)

DISTRICT PROFILE

ALFRED
WIGER
—
Minnesotan

I have always been inspired by the bigness of the Red River Valley of the North—its broad expanse of fertile, level lands, large farms, and friendly, hard-working people. To me it is one of the most unique agricultural areas in the world.

The future possibility for greater production is unlimited, but to bring this about the Valley needs such soil and water conservation practices as proper land use, tillage, drainage, rotations, tree planting, and many others.

One of the first men to recognize this need for conservation was Alfred Wiger, who owns and operates a farm of 690 acres 2 miles northwest of Ulen, Minn. Wiger, a robust, genial man of boundless energy, is known as "the daddy of the soil conservation movement in the Valley." He is chairman of the East Agassiz Soil Conservation District, vice chairman of the Minnesota Association of District Supervisors and a director of the National Association of District Supervisors.

Wiger's parents came to the Valley in 1870 from Wisconsin. Alfred was born and raised on his father's homestead near Ulen. He graduated from the Northwest School of Agriculture at Crookston, Minn., in 1918 and started farming the home place in 1919.

While attending school at Crookston, Alfred walked 11 miles on week ends to court the future Mrs. Wiger, a lovely girl from Norman County, then teaching school in the vicinity. During the summer he drove a spanking team of bay and roan ponies and a shiny, new buggy 30 miles to see her.

The Wiger family includes a daughter and two fine sons. The daughter, Mrs. Orville Anderson, lives on a farm near Ulen. The boys, Julien and Conrad, like their father, are graduates of the Northwest School of Agriculture at Crookston. Julien, the older, is a Navy veteran and Conrad is attending Luther College at Decorah, Iowa.

Wiger's farm plan with the East Agassiz Soil Conservation District provides for proper land use, soil building, wind erosion control, drainage, wildlife, and woodland management. There are

111 acres in clean-tilled crops such as corn and potatoes; 161 acres in small grain; 112 acres in sweet-clover used for hay, seed, or pasture; 98 acres in perennial grass and legume hay (alfalfa-brome); 79 acres in permanent pasture; 109 acres set aside for woodland and wildlife; and 18 acres allocated to buildings and roads.

Rotation and field lay-out provide alternate strips for wind erosion control. More than a third of the cropland is in soil-conserving crops. Live-stock averages 26 head of dairy cattle, 7 horses, 30 ewes, 20 lambs, 5 brood sows, and about 400 chickens.

Wiger believes in trees. Three miles of field windbreak have been planted—about 14 acres—and in addition 80 acres are maintained in protected natural woods along the creek. Wildlife has not been forgotten. Beavers, unmolested, have built a dam in a natural coulee and impounded water for a distance of half a mile.

Mrs. Wiger is an active partner on the farm. Through her cooperation and adeptness, Wiger is enabled to devote time to off-the-farm activities, including his work on soil and water conservation.

—ROY E. BENNETT.

WIGERS AT HOME.

Top, reading across: Mrs. Wiger checks over garden; Wiger dusts potatoes in wind strip; it takes two to make a team.

Second row: Intermission from haying, as Mrs. Wiger brings out afternoon lunch; the two boys help with the stacking.

Third row: Barley is well liked; more bug-discouraging operations; Wiger prepares to haul some of his bluegrass "Junegrass" strippings to market.

Bottom: Field windbreak and strip cropping for wind-erosion control.

GOOD "NEWS."—The New Mexico Association of Soil Conservation Districts, organized in April 1948, has launched a quarterly publication they call *New Mexico Conservation News*, which they publish in cooperation with the State Soil Conservation Committee.

The first issue gave a cross section of National, State, and local conservation activities in readable and highly informative form. John S. Young of Cuba, Cuba Soil Conservation District, is the president of the association. Noel McDade of Clayton, Northeastern Soil Conservation District, is vice president, and Mrs. Evelyn Kethley of Serafina, Gallinas-Tecolote Soil Conservation District is secretary-treasurer.



NATIONS WORKING TOGETHER

(Continued from page 101)



Assembly at work.

tures to provide instruction that will make clear the penalties of violating the physical laws of nature and the rewards of living in accord with them. To grow in knowledge of nature and human life is to grow in conservation wisdom. There is no school too poor or too elementary, there is no agency of society too exalted or remote, to assist in the widening of knowledge. The function of education is twofold: To bring about an immediate understanding of the crisis we are in and of the ways of resolving it, and with the passage of time to illustrate the goals toward which we work so that men's thinking and their institutions will come naturally to conform to them. We have learned at sore cost that where there is the greatest ignorance there is the greatest danger.

Governments must implement conservation; they must provide legislation that will guarantee the conservation of natural resources; they must create agencies that will preserve them for the fulfillment of their important social function; they must arbitrate among conflicting interests and, when necessary, supply such controls as specific problems may require; they must support education and scientific research. Every government must amplify and extend its cooperation to other governments in the work of conservation, in planning and direction, in bringing about the vast common attack on problems that no more respect the boundaries of a political unit than a flood respects them.

Henceforth, conservation, the maintenance in full vigor of the renewable natural resources, cannot be a mere professed faith, acted on only sporadically and in part, ignored and violated in the interest of immediate gain. It must be acknowledged as the principle that must govern the actions of individuals and societies alike if progress is to remain possible. Time and events have shown us that the earth determines the pattern of man's fate, posing a choice which for a few moments we are still free to make. Our faith is that we will make the choice which can save us. We hope that this Denver Conference has served to set the vital choice in a clear light.

BACK AS DELEGATES.—Among the representatives of 21 countries attending the Inter-American Conference on Conservation of Renewable Resources in Denver, in September, were 14 delegates and technical advisers who received soil conservation training in the United States:

Delegates

El Salvador, Jorge Salvador Jauregui, Sub-Secretary of Agriculture, and Manuel Chavez Viaud, Chief of the Section of Conservation of the Soil;

Haiti, Andrew Demesle, Director of Agricultural Extension, Department of Agriculture;

Mexico, Lorenzo R. Patiño, Director General, Department of Conservation of Soil and Water, Ministry of Agriculture and Livestock;

(Continued on page 107)

Maryland Puts On a Show

PHOTO STORY *by*

HERMANN POSTLETHWAITE

RENOVATION of a 175-acre, 200-year-old farm took place in 1 day near Jefferson, Md.

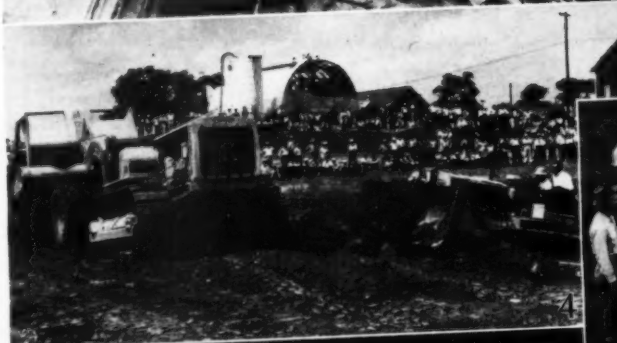
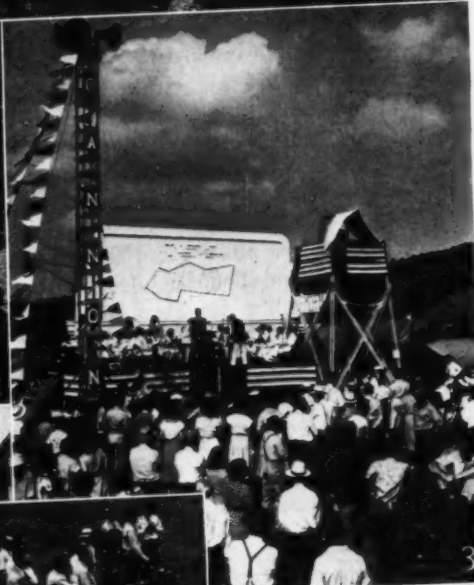
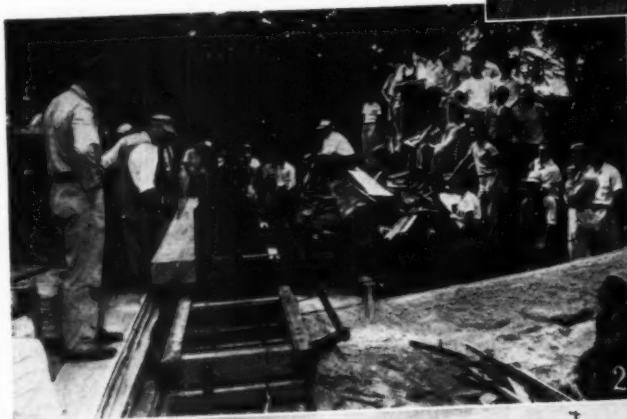
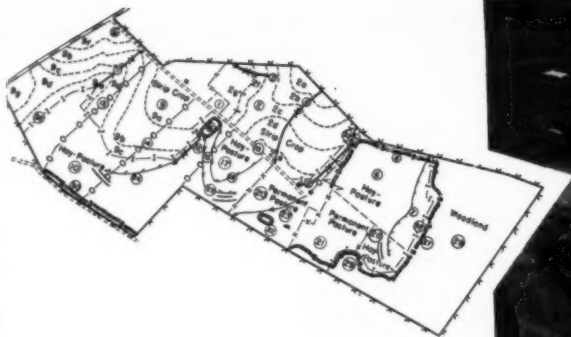
Replacing straight-row cultivation within square-fenced fields were such measures as contour fences, terraces to control water runoff, contour strip cropping, new pastures limed, fertilized and seeded, and a pond for water storage. All of it was based on a land-capabilities map prepared by SCS technicians.

The farm of Mrs. Nellie V. Thrasher was ideal for demonstrating the many practices necessary to heal the marks of outmoded agriculture and give an impetus toward higher production.

At the end of one day, the Thrashers found themselves with a farm embracing many of the innovations of modern conservation farming. Bountiful crops and secure soils should ensue—one more step accomplished in the drive to make the American land safe and strong.

ACTION SHOTS.

1. Mrs. Thrasher's farm as it looked from a plane about 4 o'clock in the afternoon.
2. Sawing lumber from trees selectively cut in farm woodlot.
3. Speaker's stand. Backdrop is enlarged copy of basic map.
4. They built a 1-acre pond for recreation and for use in new dairy barn.
5. Cameramen waiting for the start.
6. Contour fencing and woodlot fencing totaled 600 rods.
7. Walkie-talkie as handled by Co. A, 115th USNG.



OUR STAKE IN LAND PRICES

By A. M. HEDGE

LAND prices are high. Whether they are too high or not remains to be seen. I am not a prophet and do not pretend to know what will happen in the future. This seems like a good time, though, for conservationists to take a look at what has happened before.

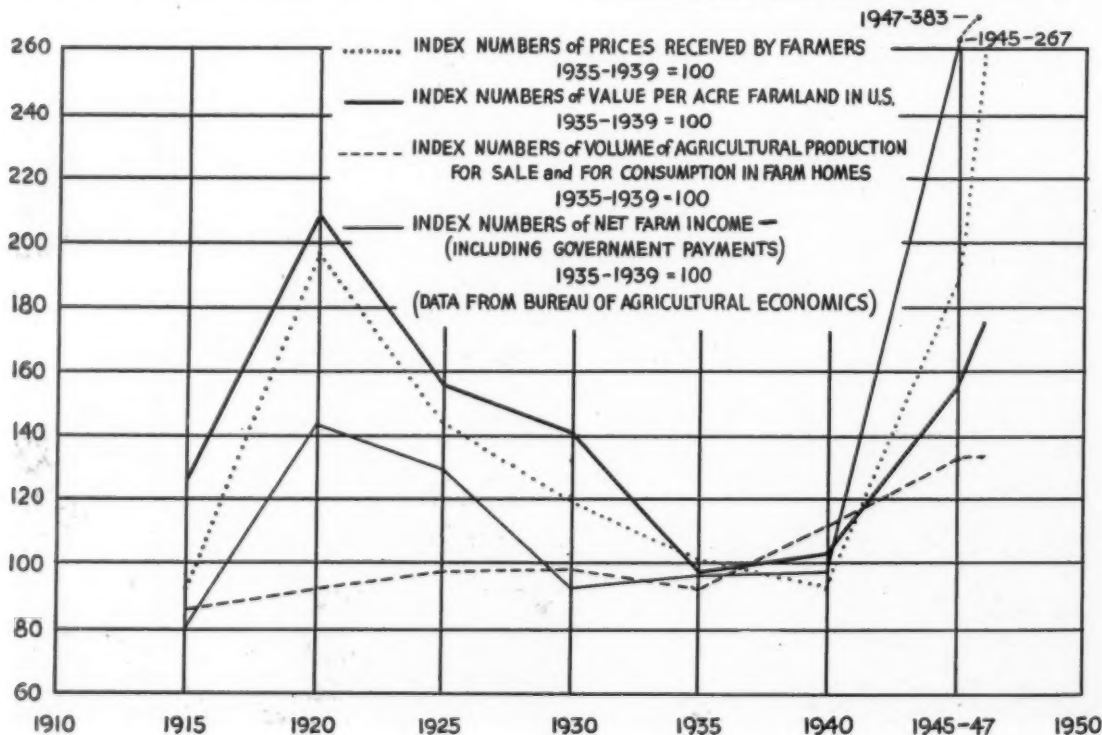
History shows that when net farm incomes are low and farmers are hard pressed to meet living expenses and keep up mortgage payments, farm land is likely to be exploited instead of conserved. At present, conditions are exactly the reverse. Although land prices are nearly as high as they were in 1920, prices received by farmers and net farm income are the highest in history. That means farmers have more money to pay for improving and conserving their land than ever before. That may be one reason so many farmers are practicing conservation. It's a good time to do that. Land that is built up now and permanently protected against erosion will continue to produce abundantly and should not decline in value so much as land that has been abused.

Experiment station tests show that returns on money spent to improve land and buildings are approximately three times as great as returns on similar amounts of money invested in additional land.

According to E. L. Sauer, research data from 10 years of records on high- and low-conservation farms in McLean County, Ill., show that high-conservation farms had sufficiently higher incomes to give them an earned value for their land of approximately \$60 per acre more than that of low-conservation farms. The high-conservation farms are those that have applied most of the conservation needed. The low-conservation farms are those that are meeting only a small percent of their conservation needs.

Some people are inclined to say that land values today are not too high in respect to farmers' ability to pay. If we could be sure that prices farmers receive and net farm income would stay at the present high levels, land values could go up even

NOTE.—The author is chief, project plans division, Soil Conservation Service, Washington, D. C.



more and not be out of line. But that little word "if" is significant. Reference to the accompanying chart will show what I mean. Figures on land values, prices received by farmers, net agricultural income, and volume of agricultural production have been plotted for the period 1915 to 1947. You will notice that the two factors most closely related to land values were net income and prices received. As those two factors went up or down, so did the value of land. Look at what happened between 1920 and 1935. During that period, land prices skidded steadily down. But it was not until 1934 that they were able to get below the prices received and it took until 1935 for them to catch up with net income in their dizzy descent. Land prices were definitely out of line with farmers' ability to pay them during that period. As a result, many good farms were lost by their owners and many others were ruthlessly exploited so that they might not be lost.

Since 1940 we have had almost a complete reversal of the conditions that prevailed between 1920 and 1935. During most of this 7-year period the index of land values has been well below the index of net incomes and prices received. During this period many farmers have paid off their mortgages or reduced them so greatly they will no longer be burdensome. That is good.

How long will these favorable conditions last? I don't know, but when prices received and net incomes do fall from their present lofty perch, they are likely to fall fast and hard. If history repeats, land values probably will be dragged down too. It would seem wise, therefore, to keep mortgage debts low enough to pay them off without having to abuse the land when less favorable conditions of income arise.

There are many things in the present unsettled condition that could cause a drop in prices and in net incomes. Government price supports, the number of people with jobs, wage levels, demands from foreign countries, weather, and population increases all will exert an important influence on the farming situation.

When and if prices received by farmers take a tumble, it is likely that net incomes will fall even faster. Farming expenses usually do not drop so fast as the prices of farm produce. Indeed, many farmers will probably never again be able to reduce their cash operating expenses to former levels. Where farm power formerly came from horses and mules that were fed on grain grown

on the farm, the gasoline truck now delivers the power and leaves a bill that must be paid in cash. Such commonly accepted operating expenses as monthly electric bills, milk pick-up, custom fees for equipment operations and many others did not draw on the farmer's bank account a generation ago. That does not mean that mechanization and electrification are bad. I am not one who wishes to return to "the good old days." I am merely pointing out how necessary and desirable cash expenses have gone up on many American farms. To meet them requires that present-day farm operations must be oiled up by relatively high yields and high prices. If the oil can is allowed to leak, trouble is ahead. There is every reason to expect yields to go even higher than now. Modern conservation methods, increased supplies of limestone and fertilizer, new and improved strains of seed and livestock, more and better farm equipment, all add up to higher production. But what about prices? All I know is that history says they have got to stay relatively high or American farmers will be traveling a rough road.

NATIONS WORKING TOGETHER

(Continued from page 104)

Peru, Luis G. de Armero, Chief, Division of Soils and Fertilizers, Ministry of Agriculture;

Uruguay, Carlos A. Fynn, Chief, Department of Classification and Conservation of Soils, Ministry of Agriculture and Livestock;

Venezuela, Miguel Parra Penzini, Chief, Division of Soil Conservation, Ministry of Agriculture and Livestock, and Jose Antonio Rugeles, Agricultural Technician, Council for Rural Welfare, Ministry of Agriculture.

Technical Advisers

Brazil, Guido Cesar Rando, Agricultural Engineer, Erosion Control Division, Department of Irrigation, San Paulo;

Colombia, Horacio Betancourt Velez, Technical Adviser to Delegate from Colombia, Guillermo Ramirez Romero, Dean, College of Agriculture, Palmira, and Fernando Suarez de Castro, Agricultural Engineer, Federation of Coffee Growers;

Costa Rica, Jorge Leon, Resident Associate, Inter-American Institute of Agricultural Sciences;

Mexico, Gonzalo Andrade Alcocer, Assistant Agricultural Attaché.

Most of these men completed their work with the Soil Conservation Service from 2 to 6 years ago. The Service is especially proud of the fact that these men were selected to represent their countries at this Conference. It is also very proud of the records that have been made by all the men from foreign lands who have trained with the Service. One of the trainees, a delegate, said, "The realization has come that soil conservation is a world-wide problem and that all countries must work together for the solution. In view of the rapidly increasing populations, depletion of the productive soil of all countries must be checked if the people are to survive. This soil conservation training is doing much to improve the agriculture of the world."



Deer Creek after the flood held large deposits of sterile sand.

A FLOOD CAME

By LESTER C. FOX

SELDOM is the final chapter of a flood story written. There is more to the story, though, than the earlier narrative of belting downpours, violent winds, flooded streams, blocked highways, ruined buildings, death, and heroism. In the case of Hydro, Okla., and its nightmarish flood of June 22, 1948, there's much more to be told.

The last part of the story is not so spectacular as the earlier chapters. In many respects, however, it is more important, for it will affect many people for a long time to come. It concerns what happened to crops and the soil they grew in and how the damage done to the land may affect the lives of those who will go on trying to farm it. Communities dependent upon them are concerned too.

NOTE.—The writer is an information specialist, Soil Conservation Service, Fort Worth, Tex.

This part of the story has been gathered by men who are directly interested—men of the Soil Conservation Service. Throughout the flood sections they made studies in the wake of the receding water.

The technicians found that in the area around Hydro alone the 15- to 20-inch rain washed away more than 15,000,000 tons of topsoil. That's equal to more than 100 quarter-section farms with a 6-inch layer of topsoil. At \$100 an acre, that's a loss of more than \$1,600,000.

In the small 5,120-acre flood plain of Deer Creek, crop loss amounted to \$240,000. It will take more than \$100,000 to put that land back into shape for another crop.

For the State as a whole, farm lands lost at least 133,610,800 tons of topsoil. That's the equivalent of a thousand 160-acre farms worth around \$16,000,000. That soil washed down onto rich bottomlands where it smothered crops and piled up as sterile sand, and into stream channels where it makes the next flood come sooner because it occupies space intended for water.

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A money value, however, cannot be put on top-soil because it cannot be replaced. Other damage can be figured. For the State it runs to at least \$21,000,000. This figure includes damage to crops, farm buildings and equipment, roads and highways, bridges, railroad tracks, and livestock.

Mansel G. Armstrong, supervisor of the North Caddo County Soil Conservation District, who owns a 520-acre farm $1\frac{1}{2}$ miles southwest of Hydro and operates an adjoining 160 acres which he rents, figures his loss at \$7,000—about \$5,000 in damage to crops, and the rest to home, farm buildings and equipment.

Before the rain Armstrong had two deep farm ponds. Afterward, he had none. Both ponds were filled with silt washed down from a farm on which there were no conservation measures. "The trouble is that the surface soil now is sand which blows in the slightest breeze," he says.

The quarter-section Armstrong rents had no conservation program. He had 118 acres in wheat, the rest in grass.

"The wheat was already cut when the rain came," says Armstrong. "I thought I was the smartest farmer in the county because I was the first to get my wheat stubble plowed under. When the rain came, the soil was bare. A lot of soil was washed away from that plowed area. In some places it was washed down to the plow marks, a depth of $7\frac{1}{2}$ inches. The part in grass lost no soil."

Marshall Felton, who farms 610 acres 3 miles northeast of Hydro, figured his loss at \$3,500 in ruined crops and damaged property. One of many farmers who checked the rainfall in various containers around their places, Felton measured 20 inches of rain in a metal stock tank after the storm.

Rain churned natural drains in a 320-acre pasture into gullies. "No one figured on a rain like that," Felton said. "That pasture was never hurt before. Now I can't put my cattle in it."

Furrow-deep silt ruined 25 acres of cotton in a contoured and terraced field. Built only last spring, the terraces had not settled enough to withstand the downpour. "They just melted," Felton said. He did not replant the field; he's going to plant it to wheat this fall. Meanwhile, he has rebuilt the terraces.

Felton had harvested 200 acres of wheat before the storm, had 200 unharvested. He got only 8 or 9 bushels of hail- and rain-damaged wheat per acre after the storm. He had made $34\frac{1}{2}$ bushels

per acre on parts of the farm earlier. He plowed under 40 acres of barley and 27 acres of oats, both crops too badly damaged to be worth harvesting.

Felton's father, Roy M. Felton, an early settler of the area and cashier of the First National Bank of Hydro, said the only comparable rain in his experience occurred in 1908 when a standard gage in his bank measured $8\frac{1}{2}$ inches. "Northwest of Hydro it rained about 12 inches at that time," he recalled. "But there was not nearly so much damage then—the land was new and the creeks took better care of the runoff."

On June 22 the rain started about 4 p. m. but did not come down hard until about 6 o'clock, Banker Felton said. When he returned to the bank at 8:30 that night, the rain gage was running over. It measured up to $9\frac{1}{2}$ inches.

The silt deposited by the flood waters has created the new problem of wind erosion for many farmers. William J. Troxel, who farms 320 acres 3 miles east of Weatherford, is one of them.

Troxel had 60 acres in cotton and grain sorghum. The rain washed off layers of soil and deposited the silt in the lower part of the sloping field. Troxel replanted the 60 acres to sorghum and cowpeas but less than a month after the flood,



William J. Troxel sifts a handful of sand through his fingers to show how easily it blows. This farm has now become distinctly air-minded. The furrows you see are practically level.

the wind was ripping the soil from that part of the field. Furrows were filling up with sand. "I never before had any wind erosion in that part of the farm," Troxel says.

"Contoured furrows on a 20-acre field of unharvested wheat helped some but not much, because my supporting terraces were not finished and they gave way. I've got my terrace system finished on 65 acres now. I figure I lost an inch of topsoil on that 20 acres. Now I've got to get organic matter back in the soil to keep it from blowing and to bring its fertility back up again."

Deer Creek overflowed Terry G. McCarty's quarter-section bottomland farm 3 miles west of Hydro to a depth of 3 feet inside his home. McCarty totted up his loss at \$3,000 to \$4,000 in ruined furniture, stored oats, and baled alfalfa that washed away; in damaged equipment, buildings and 1,100 bales of piled hay from which a new shed of aluminum and galvanized iron blew away.

"I didn't lose any soil to speak of," McCarty states, "but 3 acres were ruined by a heavy deposit of silt washed down from my farm road and pasture above." The silt piled up in places almost fence high. The sloping pasture is composed of inferior grasses, weeds, and brush which do not hold runoff in check so well as the better forage plants.

Although it was a comparatively well sheltered bottomland farm, the deposited silt created a wind erosion hazard. Within a month after the flood, soil was blowing as McCarty prepared a field for the next crop.

John B. Nix, youthful farmer who has a 160-acre place 6 miles southeast of Weatherford and operates an additional 60 acres up above, lost all his crops except wheat which he had harvested a few days before the storm. He also lost 120 pullets and 40 to 50 hens. His barn collapsed and blew away. His brooder, chicken houses, and granary were demolished. Shingles blew off his house. His garage was moved from its foundation and his house was twisted 3 inches off plumb. He immediately replanted his crops and began repairing the property. He said:

"Right now I see damage of about \$5,000. And by being a month late, the crops may be a total loss. If weather is favorable, however, they may come out all right."

Nix had plowed under 4 or 5 acres of wheat stubble when the storm broke. "That plowed part

was a mess. It washed down to the plow marks. But it didn't wash enough to hurt anything where the stubble was. There it just silted some from soil washed down from the farm above."

Nix had his cropland terraced last spring. New and not yet settled, all the terraces broke in places but, even so, they helped a bit. One terrace built on the rented 60 acres 2 years ago held, but those terraces above and below it, built last spring, gave way in places.

Nix estimated the rainfall on his place at 18 inches. That's 62 percent of the average rainfall.

E. H. Strauser, who farms 320 acres 4½ miles southwest of Weatherford said he lost only a minimum of soil. The heavy rain did practically no damage as it was carried off safely from a sloping, contoured and terraced 16-acre field in wheat stubble. Several acres of pasture, however, were damaged by silt washed down from two neighboring farms.

It's going to take time for some farmers to recover from that flood. It will be an uphill fight, for where topsoil loss was serious, crop yields will be lower until the land can be put into top condition again.

The soils investigators summarized their findings in a report to regional headquarters in Fort Worth:

1. Soil loss was kept to a minimum by an adequate cover of vegetation such as grass, grain stubble, or other crop residue.

2. While many mechanical structures gave way under the impact of a rain they were not intended to combat, they helped to reduce soil loss. Such structures included terraces and farm ponds.

3. Mechanical structures are of maximum benefit when they are used to support conservation practices involving vegetation.

4. Greatest damage to soil was done on cultivated areas having neither vegetative nor mechanical protection.

5. Accumulations of silt here and there created a new problem of wind erosion.

"There was one heartening factor," said Louis P. Merrill, regional conservator of the United States Soil Conservation Service. "It was proved that the land can be protected by a program of coordinating soil conservation practices even in an exceptionally heavy rainfall. In some areas 16 to 20 inches of rain pelted the soil in 8 hours. Yet, where there were integrating soil conservation practices on the land, soil losses were comparatively



Here had been a stock pond on the Mansel G. Armstrong farm. Like another pond on the farm, it is now filled with silt washed from a neighboring farm. Water was 8 feet deep where the tree stands.

slight, in some cases negligible. That was especially true of the vegetative phases of the soil con-

servation program. Where there was a good cover of grass or stubble, the soil washed very little."

CALIFORNIA ZIGZAGS.—A patchwork of 50,000 acres of contour strip cropping is helping refill the understocked well springs of southern California's big Antelope Valley Soil Conservation District.

Such details as soil types, degree of slopes, and amount of erosion all enter into planning the strips, which farmers say afford perfect protection from heavy storms. Much of the rain and runoff water, caught in the coarser soils fringing the upper edge of the valley, sink in and percolate down to bolster underground basins. Without the strips, water reaching the valley floor or running into the dry lakes would evaporate.

Seventy farmers are using from 160 to 10,000 acres of strips on dry farmed grainland now. Another 15,000 acres of water or wind control strips are on the district's future work calendar. Wind strips worked out so well as buffers against this year's big blow that farmers have put in an additional 5,000 acres.

Antelope district cooperators like the way the strips are pulling their grain crops through the dry 1948 months. Some of them would have faced crop failures without them. The strips conserved last year's rainfall and also stored up the 6 to 7 inches that fell up to midsummer.



The Ritter Brothers ranch is one of the largest users of strip cropping in the Antelope Valley Soil Conservation District.

New things on the AGRICULTURAL LANDS of America



Chief Bennett inspects Jones Creek watershed, Monona County, Iowa. The soil conservation work was completed over this entire watershed several years ago. Overgrazed slopes have been regrassed and some of the deeper gullied lands have been clothed with trees. At one critical point a water detention dam was installed. Prior to this work, Jones Creek watershed had violent floods and every heavy rain poured destructive loads of silt over the rich valley lands below. The conservation work done by the Service has stopped the erosion nearly 100 percent. It has stopped siltation almost 100 percent and it has reduced the flood flow by 75 percent, according to best estimates.

By HUGH BENNETT

THERE are good reasons to be encouraged about our American land. Not satisfied—encouraged. Here are a few 1948 glimpses at some of the things I saw going on.

First, at mid-August, the corn crop through Ohio, Indiana, Illinois, Iowa, South Dakota, Nebraska, Oklahoma, and Texas was the best looking corn crop I ever saw. Dark green everywhere except on thinly eroded slopes; uniformly developed and very heavily fruited. On tens of thousands of acres I saw corn that will yield 50 to 100 bushels, plus. It's a record crop that speaks well for the 1948 brand of American agriculture and well-tended land.

Then, too, everywhere I saw the plains the picture was almost uninterruptedly green. South Dakota, for example, was that way from the Black Hills to Iowa, except in the badlands and the yellow stubble of wheat fields. Green grass, green corn—all in violent contrast to the drought-seared landscape and dust-dimmed fields I saw while crossing the State as a member of the Drought Committee in 1936. Instead of ailing land and discouraged people, I saw this year people beaming proudly over their wonderful yields. Thirty bushels of wheat per acre, forty bushels, even more in some fields, and "more grass than all the animals of the State can eat!" Money in the pocket, too! Everybody's well off, apparently, tenant farmers and all!



Looking upstream in the Nepper watershed at a completed fill and outlet flume of a gully control structure that was installed on a local county road. The banks of the gully, which was 38 feet deep, below this road, have been sloped and seeded.

That kind of situation makes people feel good.

L. U. Land

I drove over great stretches of "L. U." land, purchased by the Government a decade previously as "submarginal" land. Much or most of this was producing little or nothing when it was bought, and much of it was tax delinquent. One large block had paid no taxes on 76 percent of its extent

for more than four consecutive years. The land was eroding when it was bought; much of the rain-water ran away as so much waste, cutting out new gullies and enlarging old ones. There was little grass. People on the land were discouraged.

When the land was bought, improvements were started by the Soil Conservation Service—that is, when the program was turned over to the Service. Fencing, adjustment of livestock numbers to the



Looking downstream, Theobald watershed, from the top of a partially completed drop inlet structure into the channel below. Chief Bennett is pointing out practices on the crop land involving terracing and contour cultivation of corn.

carrying capacity of the range, delayed grazing, well-dispersed grazing, reseeding. Ponds were built at strategic locations to bring about more even distribution of the grazing. Grazing districts were established, under the direction of local ranchers. Technicians of the Soil Conservation Service made range surveys and conservation land surveys of the purchased areas and, in cooperation with the ranchers, worked out the grazing capacity of the land, area by area.

On a tract of 248,230 acres near Wall, S. Dak.—the Cane Creek District—7,911 animal units were put on the range after the improvement work got well under way for a 7½-month grazing season; now, this year, the same area is carrying 16,821 animal units for the same length of grazing season, and the grass is still improving. Also, the erosion is almost completely under control. Not only that, grazing fees are paying the cost of the Government's contribution in the way of technical help, keeping records, etc., as well as the costs of upkeep of the range by the graziers through their grazing districts. Local estimates, moreover, were to the effect that more returns were going into the exchequers of the counties including the grazing lands than the counties had ever received from taxes. Besides this, good payments were being deposited in the Federal Treasury in accordance with the requirements of the Bankhead-Jones Act.

Some of the improvement work in this pasture (if you can call that much land a pasture) consisted of 115 stockwater ponds, 9 springs developed, 33 cattle guards, 209 miles of boundary and cross-fencing, and 19,333 acres seeded to crested wheat-grass. And, altogether, 142 cooperatives were using the grazing land, and paying for it.

Approximately 200,000 acres of South Dakota land that was producing little or nothing a few years ago have been reseeded to grass by the Soil Conservation Service in cooperation with soil conservation districts and grazing districts.

Water Spreading

As estimated, on the basis of our surveys and experience with water spreading on some 5,000 acres of land in southwestern South Dakota, there are in the neighborhood of a million acres of range land in the western third of the State on which it is practical to carry on water-spreading operations that will result in doubling the carrying capacity of the land. We drove through some of

the land on which water spreading had given such an increase. It's a promising field of agricultural endeavor for South Dakota and other Plains States. You will hear more of this, I am sure.

Stubble-Mulch Farming

Stubble-mulch farming is getting along nicely in South Dakota. In some localities pretty nearly all of the grain stubble which we saw plowed had a good mulch of straw and stubble on the surface. In some places we saw about 50 percent clean plowing with no surface mulch and in other places about 85 percent of fair to good stubble-mulching. Use of the practice is growing. Some farmers using the "one-ways" are turning under too much of the crop residue, but ways can be found for improving this.

The idea seems to be spreading that the best time to practice subsurface cultivation for stubble-mulch work is right after the grain is harvested. It is claimed that there is no reduction of yield when the work is done at this time, but usually an increased yield. Stubble-mulch farming is an excellent way to hold both the soil and the rainfall. It will give good protection to a large share of the Plains States' cultivated land.

Contour Plowing Olympics

At Sioux Falls, S. Dak., on August 18, I attended the contour plowing and terracing match, along with 4,000 others. It was an exciting event and of far more importance to people than throwing the discus over at the European Olympics, as I see it.

Two days later, I was at the 2-day plowing match and farm renovation conservation meeting at Cherokee in northwestern Iowa, attended by 43,000 farmers and others.

Nearly a thousand local farmers participated in this meeting in some assigned capacity, I was told, and about a million and a half dollars worth of machinery took part in the work or was on exhibition. Fifteen major measures were applied to the land in the "face lifting" part of the great meeting, not counting the survey and farm plan that were made in advance. I listed these as we drove back and forth over the farm.

These meetings are educating great numbers of people as to the critical need of taking better care of our declining land resource. They are being held in many States, and undoubtedly are doing

undeterminable good in the way of education. The importance of this can scarcely be overestimated because the soil is the source of our food, most of our clothing, all of our wood products, and an increasing amount of raw products for industry. It is the most indispensable resource of mankind—the only resource, along with the rains that make land productive, without which there can be no life on earth.

Yet some individuals are seeing in this movement, which was a hundred years late in getting under way, only enough to say: "Yes, but what is it costing the Government?"

My answer to this negative point of view is: It is not costing the Government a single cent; it is putting more back into the Federal Treasury as the result of the soil conservation now being done than goes out of the Treasury to pay for the Government's technical assistance furnished to the farmers' soil conservation districts. It's an investment, not an expenditure.

The Government does the planning for soil conservation work on these "face lifting" farms and on the millions of other farms in soil conservation districts. Every plan made is done at the request of the farmer-managers of the districts.

Modern Flood Control

During the Cherokee round-up, I stopped off to see the flood control work being carried on under the Little Sioux River Watershed Authorization. Here the Soil Conservation Service is co-operating with the local soil conservation districts in this important phase—the upstream phase—of the flood control job.

The job is being done, subwatershed by subwatershed, beginning at the upper end of the tributary streams, along the "little waters" where floods originate, and working on down to the main channel of the Little Sioux. The procedure is exactly the same in principle as it is in the other watersheds of the country where the Department of Agriculture, through the Soil Conservation Service and the Forest Service, is going extensively into flood control work on watersheds, as authorized by Congress in the 1936 Flood Control Act. The major engineering improvement of rivers for flood control and allied purposes is the responsibility of the Corps of Engineers, Department of the Army. The two Departments work closely together to handle Federal responsibilities for flood control in authorized drainage basins,

the activities of one agency supplementing those of the other. This upstream work is an outgrowth of the Upstream-Engineering Conference held in Washington on September 22-23, 1936.

The flood control part of the Service's contribution consists of public-benefit jobs over and above the ordinary soil conservation work carried out, farm by farm, in soil conservation districts. It covers such items of work as the construction of water-detention reservoirs, gully plugs, diversions, and roadside work of the kind that farmers cannot and should not be expected to do. Farmers ordinarily cannot carry out such operations because of their size and also because they have a public benefit, affecting many people downstream from the points of installation. But the farmers are helping, the county highway authorities are helping, the soil conservation districts are assuming responsibility for general maintenance operations and farmer cooperation, and a committee of 12, in the instance of the little Sioux, composed of representatives from the various soil conservation districts covering portions of the watershed, is furnishing very helpful assistance in setting up priority work jobs, assignment and routing of machinery, developing arrangements for farmer and soil conservation district assistance in connection with the cost and execution of maintenance operations, and so on.

Such a highly cooperative arrangement with the farmers is perhaps the backbone of the matter of getting the flood control job done expeditiously and effectively and of maintaining the installations.

Theobald Subwatershed

The Theobald watershed of 861 acres affords a typical example of the need for detention reservoirs and other water controls along those tributaries of the Little Sioux which traverse the steeper and more difficult parts of the watershed. In this tributary valley, from the upper to the lower end, 3 detention reservoirs; 10 dams, 9 with drop spillways and 1 with chute; 2 road culverts, 1 with chute and 1 with drop inlet; and 2 pipe drop inlets are being installed. The installation of these 17 structures involves approximately 15,800 cubic yards of excavation, 226,400 cubic yards of earth fill, 1,200 cubic yards of reinforced concrete, and 2,000 feet of various kinds of pipe, ranging from 6 inches to 30 inches in diameter. Along the main channel, which has

a total fall of 114 feet in about $1\frac{3}{4}$ miles, a large detention reservoir and 10 small structures will provide for $85\frac{1}{2}$ feet of drop in the water flow (114 feet total, less $28\frac{1}{2}$ -foot fall along the channel between the structures). This is the equivalent of reducing the amount of fall in the channel proper to $28\frac{1}{2}$ feet or from a gradient of about 1.3 percent to 0.3 percent. Thus, much of the channel cutting power of the water— $85\frac{1}{2}$ feet of drop—will be eliminated by reason of the fact that the energy will be dissipated by dropping on concrete platforms. These 11 structures thus will have the result of reducing the velocity of flow along the earth channel sections sufficiently to prevent serious channel erosion and, coupled with the 6 structures in lateral drainages and the installation of other soil and water conservation measures and proper land use, will practically control the entire erosion problem in the subwatershed.

Looking over the engineering work having to do with the handling of water in this watershed, one finds rather complicated mathematics translated into the simplest sort of structural devices. The elements of obscurity that normally saturate mathematical equations insofar as most people are concerned are all obliterated. You see at a glance just how the cutting edge of falling water is almost done away with.

Nepper Subwatershed

In the Nepper watershed, comprising 485 acres, the job of both soil conservation and flood control installation was completed while I was there on August 19, 1948. An interesting item in this watershed is the installation and stabilization of drainage outlets (with grass seedings to protect the banks). In one place where a county road was involved, the county authorities paid for the movement of earth along both sides of the roadbed, amounting to something like \$4,000.

The Nepper watershed job was, in point of complexity, a pretty close runner-up to the Cloud Creek watershed of the Washita River flood-control job in Oklahoma. I attended the celebration of the completion of the Cloud Creek job in July, this year. The occasion of that celebration was the completion of the first flood-control job of a tributary floodstream from upper to lower end as provided for under the cooperative arrangement between the Soil Conservation Service and a soil conservation district. Closely similar jobs have been completed on other watersheds, such as Jones

Creek tributary of Soldier Creek, which parallels the Little Sioux. The Jones Creek job was completed by the Soil Conservation Service through the use of a Civilian Conservation Corps camp in 1938. As both a flood-control and erosion-control undertaking, the Jones Creek work has functioned with a high degree of success. It has controlled the erosion almost 100 percent and siltation by nearly 100 percent, and it has reduced flood heights by approximately 75 percent.

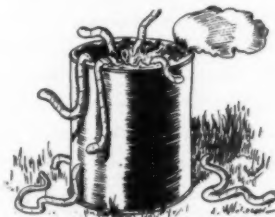
This kind of flood-control work, as well as the acre-by-acre complete soil conservation treatment of farms, is something entirely new in America, and probably in the world.

The concept of both is the product of the Soil Conservation Service and its staff. As a matter of fact, both ideas were part and parcel of the original method of procedure adopted by the Soil Conservation Service in its beginning, and adhered to, with refinements, until the present. There are likely to be imitations and shortcuts; but only work based on this sound concept that takes into full consideration the pertinent physical facts can succeed. This is no one's opinion; it's the statement of a law of Nature.

NORTHEAST

SUPERVISORS TALK MAG.—The supervisors of the Middlesex (Conn.) Soil Conservation District have written to all cooperators telling them about *SOIL CONSERVATION Magazine*. Many cooperators, says the letter, will undoubtedly wish to subscribe to this publication which is so "filled with good ideas on sound conservation practices" and which carries enjoyable reading on "what other conservation farmers throughout the United States are doing." The letter suggests that farmers wishing to subscribe send their checks to Vic Galgowski, secretary-treasurer, for transmittal to the Superintendent of Documents.

SOUTHEAST



MORE FISHIN' WORMS.—Take it from Henry Sheppard, if you want plenty of fishing worms just grow crotalaria long enough and there will be plenty for the digging. Sheppard, a cooperator with the Lower Chattahoochee River Soil Conservation District at Americus, Ga., said

that in one field where he has grown crotalaria for 12 years as a part of his soil conservation program, he can go out any time the soil is moist and dig fish bait anywhere.

"I don't know anything else that will make the land that rich," Sheppard said, adding that crop yields as well as fish bait have been boosted by conservation farming. "We have made some good yields as a result of conservation practices," he commented. "Last year our wheat averaged 26 bushels to the acre. We usually make 45 to 50 bushels of oats per acre and we have made as high as 65."

EQUAL TO YEAR IN COLLEGE.—The Elloree Negro Group Drainage Project in the Orangeburg County Soil Conservation District of South Carolina was completed in July when the last of the 7,116 yards of earth was removed in excavating a main canal 1.1 mile long serving seven farms along Santee River.

An instructor in South Carolina's A. and M. College, brother of the Elloree Group leader, was so pleased with this job that he invited the college's Dean F. Marcellus Staley to look over the project. After seeing the work of this Negro group, Dean Staley applied to the district for the assistance of Soil Conservation Service technicians in helping the college staff plan and apply a complete soil and water conservation program on the college farm.

Work Unit Conservationist Joe Earle then conducted the college officials over the E. B. Mack farm where they studied the treatment of land according to capability classes. Upon completing the field study, Dean Staley remarked, "The trip to Mr. Mack's farm was equal to one year of study in college."

PASTURE ON WHEELS.—Roy Beck, work unit conservationist at Beaufort, N. C., used pastures on wheels to arouse interest in a complete conservation program.

On a recent visit to the Carteret Work Unit, District Conservationist R. P. Moore noticed a group of farmers huddled around the back of an SCS pick-up with their attention focused on something in the truck bed. He found they were examining Ladino clover, sericea, and other plants growing in bushel baskets.

These baskets of pasture and hay crops have traveled over most of the roads of the county as Beck goes about his duties. When the pick-up stops for a while it never fails to get an audience.

GOOD FARM PLANNER.—A good farm planner is one who uses the farmer's interest in one or two practices to get him to adopt a complete conservation plan where the capabilities of both the land and the man have been given consideration. This planner gets practices applied and maintained.

A poor farm planner is one who lists several conservation practices needed, and buys the farmer's signature by giving him assistance on the one or two practices in which the farmer is interested. This planner gets poor application and maintenance of planned practices.

These are two of several conclusions drawn by A. H. Chapman after making a thorough study of 726 farm conservation plans of 17 work units in 7 southeastern States. Chapman is assistant chief of the regional project plans division of Soil Conservation Service, Spartanburg, S. C.

A few other conclusions:

1. Farmers are, almost without exception, for soil conservation.

2. Farmers value soil conservation, first, as a good financial investment, and second, for erosion control benefits.

3. Where SCS work unit personnel have been at one location for a considerable length of time, they are held in high regard by the public generally and application of the program is satisfactory.

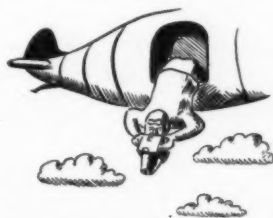
4. Frequent changes in work unit personnel have been detrimental to the work of districts.

5. Work is greatly accelerated by the addition of one or more well-trained SP-5 conservation aides to a work unit staff.

6. Properly planned farm conservation programs effectively presented at the time of planning constitute the best insurance that satisfactory goals of application and maintenance will be met.

STILL MORE READERS.—From South Carolina comes word that the Bishopville Kiwanis Club, noted for being on its toes, has entered 15 subscriptions to SOIL CONSERVATION Magazine. Copies will go to high schools and veterans classes.

UPPER MISSISSIPPI



LOOKING DOWN ON DISTRICT DOINGS.—Commissioners of the Mills County, Iowa, Soil Conservation District recently purchased an aerial camera. They have been getting pictures of the progress of soil conservation on the farms of southwest Iowa and by late fall expect to have 300 aerial pictures of district activities and accomplishments.

Many photographs are in color. They will be used to show farmers the benefits of modern methods of anchoring the soil and putting their land to its proper use.

The district, by the end of 1948, will have completed 1,000 miles of broad base, level terraces. These are located on a majority of the 328 farms under the district program.

But these farmers are not satisfied with terracing alone, or with any single soil-conserving practice. Their main interest is in putting land to its best long-term usefulness.

Farmers are emphasizing proper land use as the key-stone of a conservation program. And that, on many farms, means an increasing acreage of grass and legumes.

NO PLOW.—Dave Cover, cooperater with the Johnson County, Ill., Soil Conservation District, loaned his plow to a neighbor a few years ago. He hasn't used one since. He has changed to grassland farming.

In a southern Illinois neighborhood where corn production is considered a "must," that is close to heresy. But Cover is proving that with grass you can produce good Hereford cattle, check erosion, and make a better living. Forty acres of apple orchard is another major enterprise.

Three hundred and twenty acres of hay and pasture provide grazing for his 100 head of cattle 9 months of the year and feed them through the three winter months. Seven ponds provide ample livestock water. Six-hundred-pound calves sold in the fall prove the effectiveness of this system.

Where there used to be a lot of broomsedge and weeds in his pasture, he now has a lush growth of redtop and lespedeza as a result of liming and fertilizing the land prior to seeding. Cover also is a cooperater with the Extension Service and with TVA on its phosphate demonstrations. He says that the carrying capacity of his pastures has more than tripled.

HUNGRY HERDS.—M. A. Drake, cheese factory owner of West Prairie, Wis., has observed the value of soil conservation and knows that cows on high-quality pasture produce more milk than those on ordinary pasture.

In July he announced that his 104 patrons were delivering 7,000 pounds less milk per day than they did a month earlier. He blamed it on poor pasture and the fact that the cows just weren't getting enough to eat. Farmers generally agreed with him.

Drake suggested that farmers renovate some pastures as recommended by the Vernon County Soil Conservation District and the technicians working in the district. Drake pointed out that these renovated pastures of alfalfa, brome grass, and Ladino clover, continue to grow and provide forage through hot, dry weather when June grass is dormant. Necessary liming and fertilization, plus a thorough disking of old sod, must accompany the reseeded.

WESTERN GULF



GOING CONCERN.—The finest soil conservation district-owned headquarters in the Nation is claimed by the Central North Canadian Soil Conservation District of Oklahoma. Their new building, constructed at a cost of \$30,000, was occupied the last day of August. Part of the space is rented to the Soil Conservation Service work unit, part is reserved for district use. The structure was built with donations from businessmen and farmers in the Geary, Okla., vicinity and with money which the conservation district made in seed and equipment deals.

TRIBUTE FOR OUTSTANDING WORK.—A gratifying tribute for outstanding work in range conservation has been paid the Soil Conservation Service and B. W. Allred, regional range division chief for the agency at Fort Worth by the *Sheep and Goat Raiser Magazine*, published at San Angelo, Tex., by H. M. Phillips. Allred is a frequent contributor.

The magazine stated in an editorial published in the August 1948 number:

"A few years ago ranchmen were more concerned over the effectiveness of the latest screwworm remedy than soil erosion on their ranch. They were more interested in the latest stomach worm drench than in the productivity of the south 100 acres of hillside grassland. The development of the sore-mouth vaccine created immeasurably more enthusiasm than did the pronouncement by certain ranchmen and ranch leaders that the range was being overgrazed and that bitterweed spread, etc. was resulting from such abuse.

"Today most of the ranchmen are considerably more interested in grass improvements and proper range man-

agement than any other phase of ranching. This is demonstrated by the fact that more than 1,600 requests for reprints were received for one article on grass run in this magazine. Too, ranchmen have learned that ample grass is the best medicine for livestock and a well-fed animal is usually a well animal.

"This interest in grass and range management is as it should be. In fact, many ranchmen have waited until it is almost too late to do anything about their grass and until much of the soil on their ranches was seriously impaired.

"In 1937 we tried to secure information for the readers of this magazine on grasses and their respective values on the range. It was not until some 10 years later that we found a source for this type of information. B. W. Allred, Chief, Regional Range Division, Soil Conservation Service, Fort Worth, Tex., could do and has done the job. Appreciation for his articles in this magazine during the past 2 years has been expressed in many ways by scores of ranchmen. He has emphasized a point that is becoming more and more apparent to the ranch operator and the landowner. Grass is basic; it and the land on which it grows must be protected and utilized wisely. In grass lies the wealth of this Nation. In grass rests the future of this Nation. The ranchmen have great responsibilities, thereby."

NORTHERN GREAT PLAINS



PUMPING OUT PROFITS.—It cost John Barringer \$1,000 to level 36 acres of land that he could not irrigate, but the first year afterward that land produced \$8,500 worth of crops. Barringer farms near Hathaway, Mont., in the Cartersville-Thurloew Soil Conservation District. Leveling was part of the farm conservation plan worked out with the help of SCS technicians.

Barringer's 180-acre farm is one of seven in a small irrigation association that pumps water from the Yellowstone River. Water is pumped by two pumps, each with a capacity of 6,500 gallons a minute. All 750 acres in the association were irrigated last year for \$489 electric power cost. Cost of installing the pumps was about \$4 per acre.

The year after leveling Barringer produced \$600 worth of corn, \$1,200 worth of flax, and \$4,500 worth of certified seed potatoes.

Barringer also intends to change over to more irrigated pasture in order to get grass into the crop rotation for the whole farm.

NO LONGER SNOW-BOUND.—Because he planted a farmstead windbreak in 1943 as part of his farm conservation plan, he was the only one in the nearby neighborhood who did not have snow piled up in his yard last winter, is the report of Clifford Burke near Hudson, S. Dak., co-operating with the Lincoln Soil Conservation District.

"We never dreamed that the windbreak would mean so much to us when we planted it in 1943," Burke said. "Wind and blowing snow used to be bad in the farmyard. Living conditions were disagreeable.

"But now that the tallest trees are up 10 to 12 feet, we feel little wind. And even last year, when snow was unusually heavy, we had no snow blowing about the yard."

The windbreak is 100 feet from the buildings and includes a row of low-growing shrubs, a row of evergreens and three to four rows of hardwood trees.

FREE TO CHOOSE.—Watching people in a self-service grocery store gave an idea to Purley Horne, farmer near Junction City, Kans.

"I noticed how much people enjoyed picking out the goods they bought," says Horne. "I figured that cows would get just as much kick out of choosing their own food. And they do.

"So now, my cropland is in grass and legumes instead of grain. I have the bromegrass-alfalfa for spring, fall and winter grazing, and native pastures for summer use. I feed hay to the stock in winter.

"I'm raising more beef than ever and, outside of the hay I feed, the cows do the work. More than that, erosion has been checked."

PRACTICES DOVETAIL.—Terracing and contour farming gave Charles Schroeder better quality grain and forage and increased yield of from 5 to 10 percent, and protection from gullies and sheet erosion. Schroeder, a cooperator with the Chaco Soil Conservation District, farms 1,200 acres near Holbrook, Nebr.

"A farm needs a complete program of conservation," says Schroeder. "One good practice often depends on another."

Schroeder also uses other conservation measures, such as good pasture rotation and management, and the retirement of steep, eroded areas from cultivation. On his farmstead windbreak, now started on the north and west sides of his farmstead, he keeps the trees cleanly cultivated to promote maximum growth and survival.

SOUTHWEST

LEVEL THE LAND.—Land leveling pays dividends to co-operators of the Sevier County Soil Conservation District in Utah through savings in labor and water and increased crop yields.

Dr. Ray E. Noyes says that leveling and grass-clover plantings have increased his production by at least one-third.

Lincoln Crane reports that the leveling of one of his fields is saving a lot of water and that he plans to do some additional land leveling this fall.

Verr Durfee states that after his field was leveled he needed only half as much water to germinate his sugar beets as was required on fields that had not been leveled.

Perry Jensen has found that the leveling of a 20-acre field has reduced his water needs by half.

Clifford Magleby needed 24 hours to fill the low places on his field and 4 days to irrigate 12 acres before his land was leveled. Now, he says, he can irrigate 30 acres in 4 days on 8-hour turns.

MANAGED WATER.—Land leveling on two farms operated by J. E. Williams near Hatch, N. Mex., has reduced irrigating time to approximately thirty-six 7-hour working days annually. Irrigation is being done with 40 percent less water. Higher-yielding crops are expected. Williams believes that his savings in labor and water will be even greater after the leveled fields have settled properly.

One of the farms being operated by Williams is his 35-acre home place, and the other of 17 acres is on the Melvin Underwood place. Underwood leveled both tracts last winter in cooperation with the Caballo Soil Conservation District.

The program worked out by Soil Conservation Service technicians called for considerable changes in lay-out of fields. Both had considerable slopes in several directions and were being watered diagonally. The soil and water conservation plan provided for the leveling of the fields in benches, each being laid out to fit the topography and to keep dirt moving to a minimum. The length of irrigation runs was reduced to around 600 feet. The field ditches were improved and structures were installed at proper points to fit the various levels of the fields.

Leveling the 35 acres required 257 hours and the movement of 20,000 cubic yards of dirt. During the first irrigation this year, three men watered the tract in 20 hours. Last year three men had needed 72 hours to do the same job.

"I figure on four waterings a year, so this means that I will save 208 hours a year in irrigating this 35-acre field," Williams said. "All the ditch boxes on this field were set in soft dirt and didn't hold water as they should, so I believe still more time and water can be saved after the boxes have settled properly."

After the 17-acre field was leveled, Williams was able to irrigate in 5 hours. Last year the same job required 17 hours. Figuring on four irrigations yearly, Williams estimates he will save 48 hours annually on this field.

Williams pointed out that this means a saving of 256 hours, or approximately 36 days annually, in irrigating his two fields. He also estimates that he is using 40 percent less water this year.

Williams is especially pleased with the way his fields are watering after the soil and water conservation program was applied. When he irrigated last year, the water formed knee-deep ponds in places. This year, with the land leveled, he has seen the water spread evenly over his fields with no serious puddling.

While Williams is well pleased with results already obtained, he is looking forward to still more improvements.

7,000 ACRES.—Revegetation in the Haxtun (Colo.) Soil Conservation District is showing progress. Several years ago this section consisted of one abandoned field after another, taken over by undesirable grasses and weeds. Now, with favorable climate and soil conditions, more than 7,000 acres of reseeded land in Logan, Sedgwick, and Phillips Counties are proving profitable ventures.

More than 125 people took part in a tour recently sponsored by the district. It included farms of co-operators who pioneered the reseeded of their land to crested wheat-grass and clover several years ago.

HIGH IN PROTEIN.—Sweetclover as a green manure crop has paid off for Delbert Fuhrman, cooperator with the Northern Utah Soil Conservation District. Last fall, Fuhrman harvested 5,000 bushels of wheat from land that had been improved by a green manure crop of sweetclover and alfalfa. He received around \$2,000 as a bonus for the high protein content of his wheat and the bushel yield per acre was about 20 percent higher than other fields not treated in the same fashion.

PACIFIC



Smiling "Ginny" and her rancher Dad.

RADIO STAR GOOD FARM HAND.—Dormer Simms, western-raised dad of "Ginny" Simms, radio and screen star, won't argue the point that conservation farming is the best way to use the land.

Simms, a cooperator of the San Fernando Valley Soil Conservation District, in southern California, is no country squire. Dude ranching, he says, is strictly out of bounds when you have to make each acre count.

Tackling tough land problems and the windfalls of ranching don't get him down. He gets a laugh out of life as he goes along. On 17 acres of his new Virleedo Farms, he raises registered hogs and milking shorthorns. Today, his ranch, 2 miles north of Northridge in the San Fernando Valley, is a show place of better farming methods. But gaining a reputation as a successful stockman takes more than rule-of-thumb ranching.

"Going down the line for conservation ranching," says Simms, "means putting your farm conservation plan to work. It will pay off for farmers, but they have to use it step by step. It's the old story of planning your work and working your plan. I use my farm plan as a constant guide to help me work out my farm problems. It shows me how to make each acre of my land produce above par."

The new sprinkler system which "Doc" Cureton of the San Fernando SCS staff helped him lay out last spring

has already paid for itself. Simms got nine cuttings of alfalfa off one 3-acre, sprinkler-irrigated field. His portable sprinkler system waters 6 acres at a time and can be moved from field to field.

Simms likes the "gentle rain" type of irrigation. He is pleased at being able to turn it off and on at will. He's just getting started on the rest of his farm plan. Improved pasture seedings, rotation grazing, weed control and fertilizers, are among his priority jobs.

Virleedo, the Spanish sounding name given the farm, is a composite of the names of daughter Virginia, "Ginny", Mrs. Lee Simms and rancher Dormer Simms.

The Simms' 100-foot long, California "ranch" home was designed by "Ginny." Vacationing this summer at her Malibu Beach house near Los Angeles after a busy season on the air, the star makes frequent visits to Virleedo Farms.

Simms says that "Ginny" herself is quite a farmer. She can do nearly any farm chore. That includes running tractors, pick-up hay bidders, hay rakes, plows, disks, and other implements. She's a big help when she's home.

Says Simms, "I sometimes wish 'Ginny' could sing a song about soil conservation. She's so sold on it."



ROADSIDE RHYMES.—Supervisors of the North Palouse Soil Conservation District in eastern Washington believe in soil conservation with a chuckle.

Early this year the North Palouse district sponsored a soil conservation jingle contest among grade school youngsters in Palouse and nearby Garfield. Originally, the idea was simply to add spice to studies about soil conservation. But when all entries were in, judges decided the jingles were much too good to file and forget.

Someone suggested that winning jingles be posted along the highways on signs similar to those used to advertise a popular shaving cream. The idea was promptly adopted. Jingles posted along roadsides now call attention to various soil conservation practices in many parts of the North Palouse district.

It is hard for travelers to miss the point. Each roadside jingle has been strategically located to call attention to a specific soil conservation practice. A jingle pointing out windbreaks, for example, is placed where trees growing on a hilltop are clearly visible. The same is true for jingles about gullies or the use of grass and legumes. District supervisors move the signs from time to time to make sure there can be no mistake as to what each jingle is about.

In addition to posting the winning soil conservation jingles along the highways, the district arranged for all youngsters who won prizes to repeat their jingles on the radio from Spokane and Pullman, Wash.

